

in Thames water, but still in as large quantity as in a water impregnated with one part in ten of sewage matter. It exists in larger quantities in surface wells, and is absent in deep well water. It evidently arises from the decomposition of animal and vegetable matter, and indicates the impurity of the water in which it is found. By oxidation, ammonia becomes converted into nitric acid, and this acid, combined with potash, soda, and lime, is found in abundance in some of the surface wells of London.

The lecturer next adverted to the nature of the organic constituents of the water of London. He pointed out the unsatisfactory nature of all chemical attempts at estimating these products. In the process of boiling or evaporating, a large quantity of organic matters escaped in a volatile form. Large, then, as was the quantity of organic constituents discovered by the chemist, they were only a part; the microscope alone revealed the extent of organic matters in water; they are either dead or living. The *dead* consists of portions of animal or vegetable bodies in a state of decay, frequently indicating the source from whence they came. Thus, in the Thames and surface wells, undigested food had been clearly demonstrated. The *living* organisms consisted of plants and animals. Of plants, various forms of *Diatomaceæ*, *Desmidiæ*, *Confervæ*, and *Fungi* were found. These were not in themselves injurious, but they were only produced as the result of impurity. Some *Confervæ*, as the *calothrix nivea*, only grew in the midst of sulphuretted hydrogen. The *fungi* were especially characteristic of impure water from dark wells. The lecturer had detected fungi in several surface well waters, which had produced disease in those who drank them. (*Quarterly Journal of Microscopical Science*, vol. iv, p. 270.) Organic matters had been found by Mr. Noad and Dr. Medlock to act on lead. The latter chemist believed that this was in all cases produced by the formation of a nitrate of lead, which being acted on by carbonic acid, gave up its lead in the form of a carbonate, which being thrown down, left it free to act again upon fresh lead. In the case of water obtained from melted ice, it was found, however, that it acted on lead, although no organic matter could have been present.

The means of purifying water were considered, and experiments on filtration through animal and vegetable charcoal, sand, sponge, and rock, exhibited. It was shown, according to Dr. Medlock's suggestion, that iron was one of the most powerful purifiers of water. Water was exhibited thus purified, and contrasted with that which was not so prepared. The difference was striking, as the one was green with vegetation and the other quite pure.

The lecturer concluded by urging the necessity of closing all surface well pumps, recommending that Thames water be boiled and filtered before drinking, and pointing out the deep well waters as the only source of uncontaminated water for drinking purposes.

Editor's Letter Box.

THE BITE OF THE TSETSE: ARSENIC SUGGESTED AS A REMEDY.

LETTER FROM JAMES BRAID, ESQ.

SIR,—Of the various interesting facts communicated to us in Dr. Livingstone's valuable *Missionary Travels and Researches in South Africa*, one of the most notable is his narrative of the remarkable and fatal phenomena manifested in oxen and sheep from the bite of the *tsetse*, which is so perfectly harmless in man and wild animals, and even calves, so long as they continue to suck the cows.

On reading the narrative, it immediately occurred to me that it would be highly interesting to institute some experiments with the view of discovering a remedy for this curious and fatal malady; and my mind immediately reverted to the prophylactic powers of arsenic against the poison of the most venomous reptiles, as set forth by Dr. Honigberger, in his work *Thirty-five Years in the East*. In the above work, at pages 134-7, the Doctor narrates the case of a faqueer, who, in the presence of himself and a scientific friend, allowed himself to be bitten by a poisonous viper without the slightest injury, but a bite of which inflicted on a fowl immediately afterwards issued in the death of the bird. The same man was imprisoned next night, and brought up in fetters to be exhibited before Shere Sing, in

proof of the power possessed by him of allowing serpents to bite him with impunity. In his way hither, as if by way of bravado, the faqueer, to demonstrate his power to a friend whom he accidentally met, at once untied the pot which contained his two vipers, and caused himself to be bitten by one of them. On this occasion, the result was, that "scarcely had he advanced two steps when he staggered and fell. But he summoned all his strength, and rose again, in order to proceed, but again fell; and, not being able to rise a second time, a charpi (stretcher) was brought, to convey him from the bazaar to my (Dr. Honigberger's) house. He was followed by a multitude of curious people; and I caused him to be taken into a neighbouring stable, belonging to the faqueer Chirakooddeen, who went immediately to see the patient, as he was then vomiting blood. Chirakooddeen was of opinion that he would never recover; and the injured faqueer being a Brahmin, he wished me to send him to a termsale (an Indian temple), in order to avoid the unpleasant consequences which might attend his death; but, on mentioning this intention to the patient, he preferred being sent to a friend of his, who was living at the town called Shaburg, where he himself had previously resided; which was accordingly done. . . . On the same day, the faqueer had a swelling on his knee, and diarrhoea; but he soon recovered, and afterwards proved very useful to me, when I began to make my experiments with the serpents, which produced so many curious results that I sacrificed upwards of two hundred fowls in less than six months."

But now comes the most interesting part of the narrative, and which has suggested to me the idea of Dr. Livingstone or others trying the prophylactic influence of arsenic in the disease above referred to, as resulting from the bite of the *tsetse*.

"The faqueer really possessed the secret of preventing his blood being affected by the bites of venomous reptiles; and, having at length succeeded in obtaining his statement, I now present it to the public. The faqueer was an arsenic-eater, and to this reason he ascribed the cause of his remaining unaffected by any serpent's venom. Perhaps he was right, because in India arsenic is an ingredient in various compositions which are recommended as remedies against the bites of serpents. He told me, that during his stay under my control, he could not procure the poison, and that was the reason why the viper's bite affected him, which might possibly have been the case."

Such is the source from which I have derived the idea of giving small doses, such as half a grain or more, of arsenic to oxen bitten by the *tsetse*. As the disease is invariably mortal to them, as far as at present known, I should think it well worthy of a trial; and, if it proves successful, this communication will not have been in vain.

I am, etc., JAMES BRAID.

Rylaw House, 212, Oxford Street, Manchester, Feb. 6th, 1858.

P.S. I have known one or two grains of white arsenic given to a horse daily for some time with marked benefit. J. B.

[Dr. Livingstone has assured us that he will, if possible, attend to the suggestion of our correspondent when an opportunity offers in his forthcoming expedition. EDITOR.]

PUBLIC PROSTITUTION.

SIR,—In reply to Mr. Acton, I beg to show him a bogie or two taken out of the cupboard; and very slimy horrible bogies they are to my way of thinking, and I imagine to that of "the public," upon whose fears, Mr. Acton says, I have attempted to operate on by "infantile intimidation." The cupboards in which these bogies were shut up were, in the first instance, in Berlin, and in the second, in Rome.

I wish, however, sir, particularly to draw your attention to the remarkable fact that the descriptions of the bogies, as Mr. Acton calls them, are taken from his own book on Prostitution!

I am, etc., F.R.C.S.

Bogie No. 1. "The town (Berlin) has been repeatedly purged since the Reformation, but has as often immediately fallen a prey to desertion of infants, adultery, abortions, and clandestine prostitution."

"In 1796, a strong and successful attempt at suppression by the religious party induced the old result of increased disease and secret vice." And again, in 1845, the same thing occurred. (p. 87.)

Bogie No. 2. In Rome, "prostitution is nominally prohibited." "Its resorts are proscribed, and so continually